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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10 027,067	12 20 2001	David John DiGiovanni	61-14-1-3-1	9849

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LAW FIRM OF PETER V. D. WILDE
301 EAST LANDING
WILLIAMSBURG, VA 23185

EXAMINER

LOPEZ, CARLOS N

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 08 01 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.

10/027,067

Applicant(s)

DIGIOVANNI ET AL.

Office Action Summary

Examiner

Carlos Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 27 June 1936.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Election/Restrictions

Applicant's election without traverse of Group II claims 5-14 in Paper No. 6 is acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "the spin" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 5-6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Onishi et al (US 6,076,376). Onishis' invention is drawn to a method of manufacturing an optical fiber of any type and imparting a twist to an optical fiber (Column 1, lines 15 and 49-59). An optical fiber is drawn from a preform having a cladding and a core even if the core and the cladding are not perfectly circular (See Col. 1, lines 49-59). Thus, showing that the core of the preform is preferably circular i.e. 0 % ovality and/or that is known in the art, that performs have a prefect circular core provides for a suppressed polarization dispersion. The claimed heating and drawing steps are disclosed in Col. 4 lines 43-52. As for the claimed twisting it is disclosed in col. 1, lines 64-65. In view that Onishi's method is drawn "to as well as any other type of fiber", it would be obvious to a person of ordinary skill in the art that the claimed method would be expected to encompass the production of the claimed multimode optical fiber. Alternatively, considering that a broad reasonable interpretation of the term "optical fiber" includes a multimode fiber and Onishis' claims are drawn to recites "optical fiber manufacturing method" it is deemed that Onishi's claimed method and disclosure anticipate Applicant's claimed method for making a multimode optical fiber.

As for claim 6, the optical fiber is spun clockwise and counter clockwise as shown by the directional arrows in figure 2.

As for claim 9, the optical fibers are silica-based.

Claims 5-6 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by DiGiovanni et al (US 6422043) or alternatively under 35 U.S.C. 102(a) anticipated by DiGiovanni et al JP 2001-220168 (Japanese Application of US6422043). DiGiovanni

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discloses a method preparing a multimode (MM) optical fiber. DiGiovanni's method is drawn to manufacturing a making a perform fiber having a circular or noncircular core (See claims 3-4 and col. 5, lines 45-47) with its correspond cladding. Thus the claimed core having an ovality of less than 6% would be met by DiGiovanni's circular core, which is deemed as a zero percent ovality. The claimed heating, drawing and twisting of the subsequently produced optical fiber is disclosed at Column 5 lines 49-64 of DiGiovanni.

As for claim 6, applicant is referred to DiGiovanni's claim 5.

As for claim 9, DiGiovanni's MM optical fiber is silica based as disclosed in claim one.

The applied reference (US 6422043) has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiGiovanni et al (US 6422043) in view of Henderson et al (US 6,240,748) or alternatively unpatentable over DiGiovanni et al JP 2001-220168 (Japanese Application of US6422043) in view of Henderson et al (US 6,240,748). DiGiovanni teaches of twisting the fibers counter and counterclockwise according to the teaching of Hart 5298047 (Col. 6 lines 3-6). However, Henderson provides a method for twisting the optical as an improvement over Hart's method of twisting (See Henderson Col.3, lines 23-24). Henderson's improved method lies in that the twisting of the fiber is a non-sinusoidal spin pattern (Col. 3 lines 23-25) wherein greater results in polarization mode dispersion (PMD) reduction is achieved in comparison to the prior art methods. As further taught by Henderson, in order to produce optimum PMD reduction the spinning rate both in magnitude and spatial distribution along the length of the fiber should vary (Col 6, lines 1-10) such as frequency and amplitude, which is deemed as the claimed changed spin pattern of instant claim 14. Thus at the time the invention, it would have been obvious to a person of ordinary skill in the art to have provided a non-sinusoidal spin pattern in Hart's fiber spin method, which DiGiovanni's employs, in order to enhance PMD reduction as taught by Henderson.

As for claims 7-8, Henderson's method provides for less than 10 turns/meter (Col. 3, lines 49-53).

As for claim 10-11, DiGiovanni is silent disclosing the claimed diameters and ratio. However, absent any indication by DiGiovanni, it would be expected that the claimed diameters and ratio be of conventional magnitude. Thus, as evidenced by

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Cabot et al (US 6597853) in column 4 lines 56-62, Examiner take official notice that the claimed core for a multimode fiber and ratio of the core to the cladding are of conventional magnitude. As evidenced by Cabot a multimode fiber typically has a diameter of 104 microns meeting the claimed limitation of "at least 30 microns" and a cladding diameter of 125 microns, which would translate to a ratio of the core to the cladding of .83, which also meets the claimed "at least .2" ratio limitation.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References E-J in PTO-892 have been cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is (703) 605-1174. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700